

found a variation never before noticed here. Occasionally parties out picking berries have come home and described a new currant to me, a black currant growing with the yellow kind, and tasting the same. This "black" fruited form is not common, only a bush being found here and there, growing side by side with those bearing yellow fruit. There is, I find, an intermediate form bearing red berries. This form is usually very low (one to two and a half feet high) and "scrubby." I also find that the "black" berries are not black but a very dark red, so dark as to appear black in fully ripe berries. The plants bearing them exhibit no perceptible difference in size, mode of growth, or color and shape of foliage, and the flower and size of the fruit is the same. The contrast formed by bushes growing side by side bearing berries of these two rich colors is very striking.—F. W. ANDERSON, *Great Falls, Montana*.

Notes on Minnesota Plants.—*Geranium maculatum*. In the Mississippi valley form the leaves do not become "blotched with whitish as they grow old."

Ludwigia palustris. The manual says: "Pods not tapering at the base." In our form they are tapering. Otherwise the description agrees. I would add that the pods have eight slight wings or ridges, four green, and alternating with them four white.

Actæa alba and *A. rubra*. These two plants grow side by side on our bluffs. Being unable to see the least difference between leaves and flower clusters, I marked several spots to study the fruits. In one place I found about a dozen or more plants in one patch hardly a square yard in extent. When I looked for the fruit, part of the clusters of berries were white, part red. Is it proper to keep these two forms separate as valid species?

Cassia Chamæcrista. Our plant has all ten stamens purple, and not "four of them yellow." Furthermore, the stem here is not spreading; the plant stands rather quite erect.

Mentha Canadensis. I noticed two forms. One form has the stem nearly smooth, with minute reflexed hairs scattered; leaves rather narrow; flower clusters quite small; flowers pale, only about one-half the size of those in the next form, with green calyx; stamens with red, when old with brown included anthers, reaching barely to the base of the corolla lobes. The second form is more hairy under the hand lens; the leaves are wider; both clusters and flowers themselves are much larger, the latter more colored, with calyx tinged red; stamens long exserted, longer than the style, which is about as long, relative to the flower, as in the first form and colored, while in the first form it is almost white.

Lycopus Europæus, var. *sinuatus*. Our forms have no sterile filaments, so far as I can find, and I have examined a great many. I distinguished three forms, which showed variations that would puzzle the beginner. In one form the leaves are broad and only slightly sinuate; flower clusters small;

stamens and style about as long as the upper lip of the corolla, which is uniformly of a pale lilac. A second form has narrower, more deeply sinuate leaves; flower clusters larger; corolla on the three lobes of the lower lip irregularly spotted with purple; style well exserted, its two lobes rather longer than in the first form. A third form has leaves and flower clusters as in the second form, but the flowers have no spots on corolla, and style not exserted, but only as long as upper lobe of corolla.—
JOHN M. HOLZINGER, *Winona, Minn.*

A deep-water Nostoc.—With the first gales of November and March each year there appears upon the shore of Lake Michigan an abundance of an interesting form of Nostoc. It was first observed in 1864 by Professor Oliver Marcy. Thrown out upon the shore by the waves, it appears as small brown, purple and green balls or thalli. These are not always round, but frequently ovoid, and the larger specimens broadly flattened. Generally they are globose, with a firm, tough exterior or periderm. Color varies from light blue-green and flesh-color to brown or purple, the browns prevailing. They are from 2 to 20mm. in diameter the usual size being 5mm. broad. Examined microscopically, the trichomes are thin and regular; diameter of the heterocysts, 5 to 8.75μ ; average, 6.87μ ; diameter of cells, 2.5 to 5.6μ ; average, 3.56μ .

In 1871 specimens were sent to Harvard College, with inquiries as to its species. Dr. Gray replied, "The plant is *Nostoc sphæroides* of Kützing. Pray keep a look-out for it from year to year. It ought not to grow in deep water." This determination proved erroneous, for in Kützing's description the trichomes are said to be swollen between the heterocysts, which is not true of our Nostoc. In 1882 Professor S. A. Forbes, examining dredgings from the lake, found a Nostoc answering the general description of our lakeshore plant, and reported the same in *Science* for June 1, 1883, as *Nostoc pruniforme*. In reply to our inquiries, he said, "It was abundant all along the city front as far out as ten fathoms deep." He referred it to Dr. Wolle, who replied, "I judge rather by your description than by the samples sent that they are *Nostoc pruniforme*." When Dr. Wolle's "Fresh Water Algæ" appeared, this Nostoc was not mentioned. Thinking it worthy of further attention, specimens were sent to him, to Dr. Farlow, and several others. In the correspondence which followed, the plant received various names. Dr. Wolle thought it might be *N. coeruleum*, while to others it seemed to have the characteristics of *N. Zetterstedtii* and *N. verrucosum*. Dr. Farlow, having examined both the autumnal and spring stages, writes, July, 1889, "I could not make the measurements of the plant of last year agree with those of *N. pruniforme*, nor can I now, on re-examination. Dr. Barnet, however, is inclined to believe that it is really an autumnal stage of *N. pruniforme*, although it does not agree with descriptions of the type."

It should be stated further, that the base of every thallus shows a thin incrustation of calcium carbonate.